

What is claimed is:

1. A single crystal of a silicate of a rare earth element wherein the crystal contains aluminum in an amount of higher than 0.4 ppm and not more than 50 ppm and/or iron in an amount of higher than 0.1 ppm and not more than 5 50 ppm.
2. The single crystal of a silicate of a rare earth element of claim 1, wherein the crystal contains cerium in an amount of not less than 0.6 mole% and not more than 5 mole% and that it has a light transmittance, as determined at a wavelength of 450 nm, of not less than 75%.
- 10 3. The single crystal of a silicate of a rare earth element of claim 1 or 2, wherein the crystal contains aluminum in an amount of higher than 0.4 ppm and not more than 50 ppm.
4. The single crystal of a silicate of a rare earth element of claim 1 or 2, wherein the crystal contains iron in an amount of higher than 0.1 ppm and 15 not more than 50 ppm.
5. The single crystal of any one of claim 1 to 4, wherein the rare earth element is gadolinium.
6. The single crystal of any one of claim 1 to 5, wherein the crystal is cerium-doped gadolinium silicate.
- 20 7. A scintillator which comprises the single crystal of any one of claim 1 to 6.